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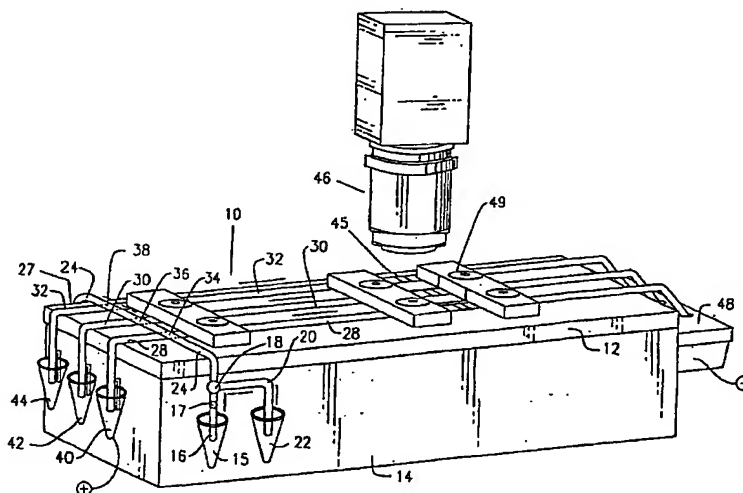
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(54) Title: MULTI-DIMENSIONAL ELECTROPHORESIS APPARATUS



(57) Abstract: An electrophoresis apparatus is generally disclosed for sequentially analyzing a single sample or multiple samples having one or more analytes in high or low concentrations. The apparatus (10) comprises a relatively large-bore transport passage (16) which intersects with a plurality of small-bore separation passages (28, 30, 32) and includes a valve system (18). Analyte concentrators (34, 36, 38), having antibody-specific (or related affinity) chemistries, are stationed at the respective intersections of the transport passage (16) and separation passages (28, 30, 32) to bind one or more analytes of interest. The apparatus allows the performance of two or more dimensions for the optimal separation of analytes. The apparatus may also include a plurality of valves surrounding each of the analyte concentrators to localize each of the concentrators to improve the binding of one or more analytes of interest.

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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